System and Method for Dispatching and Scheduling Network Transmissions with Feedback

ABSTRACT

A computer dispatcher connected to one or more respective network buffers has stored file lists that identify one or more of the files in the database that are to be transmitted over networks connected to the respective network buffer. A scheduler(s) schedule one or more portions of one or more of the files to be written to the respective network buffers by defining transmission criteria about each of the files in the file list. These transmission criteria include a quantity to transmit criteria, defining a quantity of one or more of the portions of the respective file to transmit, and one or more release times. The release times define the time at which the respective portion is to be written to the network buffer. The system includes a dispatching process that determines an available space on one or more of the network buffers and a current system time. The dispatching process determines if the system time is greater than or equal to one of the release times and further takes a minimum value of the available space and the quantity of the respective portion. The dispatching process then writes the minimum value of the respective portion to one or more of the network buffers. A feedback mechanism, e.g. a quantity completion measure, is used to estimate a completion time of the writing of the respective portion to the respective network buffer. The scheduler then reschedules one or more of the portions if one or more of the portions can not be scheduled to meet the respective transmission criteria.